

REVOLVING DOORS SWING DOORS

REVOLVING DOOR
AND ENTRANCE DIVISION

INTERNATIONAL
STEEL COMPANY

EVANSVILLE 7, INDIANA, U.S.A.

Complete **PACKAGED** Entrances

CATALOG
600

WORLD'S LARGEST MANUFACTURERS OF REVOLVING DOORS

HOW TO PLAN AND USE INTERNATIONAL

USAGE AND PLANNING. There is a design, size and type of International-Van Kannel Revolving Door for every entrance purpose or kind of business.

Before planning your revolving door entrance, refer to local building codes for design limitations and exit requirements. Some codes require supplementary swing doors. In using revolving doors and swing doors together, the revolving door's purpose should not be forgotten — to handle anticipated normal peak traffic. Swing doors should be planned only to handle excess traffic.

The number of revolving doors should be based on expected maximum traffic, with swing doors used only as required and thus preclude counteracting the purpose of revolving doors, i.e., control of traffic, temperature, dust and noise.

DOOR SIZES. Accepted standard for normal use is 6'6" diameter by 6'10" high. Custom-built doors may vary from 5'6" to 7'0" diameter; from 6'8" to 7'6" high. Doors 5'6" diameter recommended only where space is

limited and traffic light. Doors larger than 7'0" diameter tempt two persons to enter the same section. Doors larger than 7'0" diameter by 7'0" high are not generally recommended for tall buildings with severe stack draft. In accordance with building code requirements, automatic exit mechanism is designed for maximum 180-pound effort to collapse. Combined action of severe stack draft and wind pressure on larger doors causes them to collapse too easily.

5'6" diameter 3-wing revolving doors are recommended for entrances with limited space, where one swing door has handled normal traffic.

ENTRANCE FLOORS. The floor under a revolving door should be level to provide airlock with entrance set plumb, although revolving doors will operate efficiently erected perpendicular to floors with slight gradual slope (up to $\frac{1}{2}$ " per ft.). If space is limited, we recommend placing door with swing of the wings approximately 18" from a step going down, or 36" from a step going up.

INTERNATIONAL STANDARD CRYSTAL MODEL

The Standard Crystal Model combines the sizable savings of production-built revolving doors and swing doors with all custom features that assure operating efficiency. Basic revolving door is floor-supported (but not free-standing), has overhead speed control, collapsing mechanism, single pushbars, bottom rail locks, and tempered wing glass.

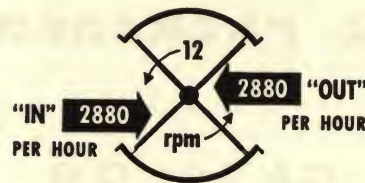
Revolving door is standardized 6'6" x 6'10". Swing door is 2'8" or 3'0" x 6'10". Revolving doors or in any desired combination.

Manufactured in stainless steel or bronze satin finish (Model No. 2880-60), and aluminum-alumilite finish (Model No. 2690-60); the standardized size is readily adaptable for most entrance arrangements. In addition to savings in both initial and installation costs, standardization assures uniformly accurate fitting of all components. Pushbars match door material and finish. Top rail locks available at extra cost, when specified. or swing doors may be purchased separately,



How to Determine Your Revolving Door Requirements

- 1 Based on past experience or estimated traffic loads select the weekday that strikes a fair average for business and traffic volume.
- 2 Within the designated working day, and well distributed over it, make at least 6 traffic counts — each covering all entrances to be replaced or remodeled — each of 15 minutes' duration and including both in and out traffic.
- 3 From the traffic counts you can figure your average traffic rate per minute and hour.
- 4 To the average traffic per hour add 60% to care for (a) peak load during holiday and other special seasons and (b) anticipated traffic increase (figuring ahead from 10 to 15 years).
- 5 Dividing the adjusted traffic per hour by 5,760 (normal traffic capacity of one revolving door) will give you the required number of revolving doors.



In normal operation, revolving doors turn from 10 to 12 times per minute. Each revolution permits 4 people to enter, and 4 to leave. The capacity of 1 revolving door is about 2,880 "in" and 2,880 "out" per hour.

EXAMPLE: A well-known department store decided to replace swing doors with revolving doors. Traffic through each of two entrances averaged 167 persons per minute or a total of 20,040 per hour. Adding 60% for growth and peak loads made a total of 32,064. Divided by 5,760 showed the need for slightly more than 5 revolving doors, which could be met by (a) 6 revolving doors or (b) 5 revolving doors and two auxiliary swing doors. Where heavy one-way traffic is the problem, use only the average one-way traffic count per hour, add 60% and divide result by 2,880. This gives the number of revolving doors required.

REVOLVING DOOR ENTRANCES

ENCLOSURE WALLS AND CEILING, must be furnished by the revolving door manufacturer to assure proper radius, efficient airlock and satisfactory operation.

CONNECTING WORK, if by another contractor, should be planned with a separation line between revolving door and connecting entrance work. This facilitates coordination and completion of both contracts. **Connecting work must brace and hold revolving door securely in position.**

MATERIALS AND DESIGN. Except stainless steel, all metals common in revolving door manufacture — bronze, nickel-silver, aluminum — can be extruded. With these metals special designs can often be obtained at minimum cost using extruded shapes available from stock dies.

Special stainless steel shapes must be formed, adding to manufacturing costs. Keeping design specifications within limits of materials used greatly reduces initial costs. Plain narrow lines are least expensive to fabricate.

Due to work required fabricating aluminum entrances, No. 204-A1-R1 satin alumilite finish is best suited; special finishes available for custom-built doors at extra cost.

A kit of tracing sheets is available on request, showing details of numerous entrance layouts.

Fabricated aluminum sheets, extrusions and tubing, though the same alloy, may differ slightly in color when alumilite finish is applied. Exact color match cannot be guaranteed. Stainless steel kick and base plates on aluminum doors protect against strong floor-cleaning materials.

FREE-STANDING, FLOOR-SUPPORTED DOORS, using floor-type speed control, may be designed as a free-standing entrance surrounded by glass at sides and top. Special structural steel framework, part of enclosure wall, extends into floor securing door in position.

GRILLES AND LOUVERS, for heating and ventilating, may be added where desired in the ceiling or enclosure walls.

ELECTRIC LOCK STRIKES, specially wired, available for recording locks and protective systems. (See Specifications, page 8.)

REMODELING OLD DOORS. Where replacement of old, non-collapsing doors is necessary, a very effective, low-cost entrance can often be obtained by installing new **CRYSTAL OR ALL-GLASS** collapsible wings in present enclosures.



*Hotel Statler, Seventh Avenue Entrance, New York City.
Architect: I. N. Simon.*

Special Custom-Built CRYSTAL MODEL REVOLVING DOORS

Featuring the same basic construction details offered in the Standard Crystal Model. Where conditions preclude use of the Standard Model because of size, design or treatment, Special Custom-Built Crystal Model Revolving Doors can be furnished with matching accessories. Special glazed, framed ceiling is available when specified for special doors.



*Baskin's, Chicago, Illinois
Architects: Holabird, Root & Burgee.*

Special Custom-Built ALL-GLASS MODEL REVOLVING DOORS

Pacing the trend toward greater usage of structural glass, this Special Custom-Built All-Glass Model features a minimum of stiles and rails — is available in a variety of metals. Individually designed and fabricated to match specific project requirements, the International Special Custom-Built All-Glass Model provides maximum visibility and fittingly complements the most modern of architectural treatments. The installation shown above illustrates how effectively these doors can be custom-fitted to suit any preferences as to size, design, and other detailing. Special glazed, framed ceiling is available when specified for special doors.



Sinclair Building, Chicago, Illinois



Famous-Barr, St. Louis, Missouri

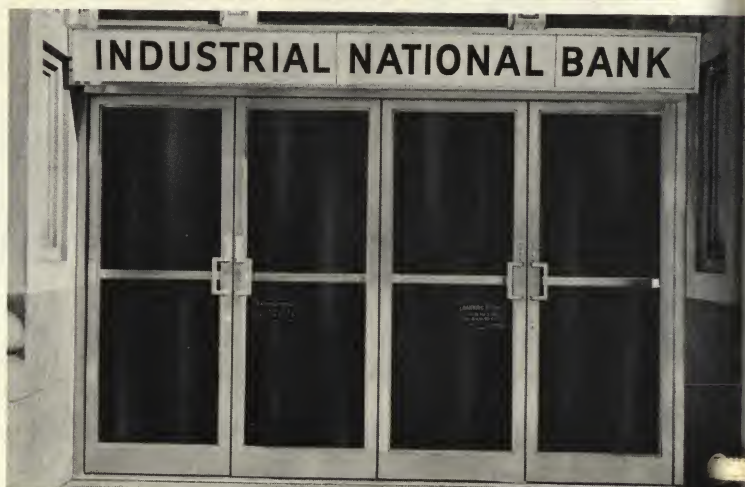
INTERNATIONAL Swing Door Entrances

International's Packaged Swing Door Entrances effectively combine stainless steel and crystal construction for outstanding beauty and durability. These modern entrances utilize standard-size doors and typical frame members for side lights, transoms, and vestibules. All auxiliary work is offered by International to make a complete, expertly blended "one package" installation.

All entrance components are precision-fitted *before* shipment — assuring quick, accurate on-the-job assembly, and performance with a minimum of maintenance. The individual sections are designed to be adaptable to virtually any desired entrance arrangement. Pushbars, locks, finish and ornamentation match to form a beautiful entrance . . . a truly customized effect at surprisingly low cost.

First floor entrances, windows, transoms, and panels in special stainless steel can also be provided by International.

A kit of tracing sheets is available on request, showing details of numerous entrance layouts.



Industrial National Bank, Detroit, Michigan

SPECIFICATIONS INTERNATIONAL SWING DOOR ENTRANCES

GENERAL: Swing door entrances shall be furnished where specified and shown on plans by the International Steel Co., Evansville, Indiana.

All entrances shall be furnished as complete packaged assemblies — carefully fitted and tested at the factory for quick, accurate reassembly on the job site.

MATERIAL: Swing doors of 18-8, type 302 stainless steel 16 USS ga. formed welded construction, reinforced for all hardware.

Jambs, side lights, transoms of stainless steel 16 and 14 USS ga., formed welded construction. Reinforced with steel framing where necessary to provide stability.

FINISH: All exposed surfaces shall have International's No. 4 fine-lined satin finish.

GLAZING: (Optional) International packaged entrances may be furnished with or without glass as specified.

HARDWARE: All hardware shall be furnished by this contractor, including pushbars and offset pull handles.

Standard cylinder deadlocks in door stiles for active exterior doors. Head and floor bolts for inactive exterior doors. Single-acting center pivoted floor-type door closer. Extruded aluminum threshold.

OPTIONAL HARDWARE: Double-acting Rixson or Doromatic floor closers, active latch locks, (floor-type door stops), (G. J. No. 90B overhead holders and stops), weatherstrips, additional or special push and pull bars available at extra cost upon request.

When specified, door closers shall be factory located and mounted on an under floor cradle jig providing positive location of door closers in relation to jambs and frames.

INSTALLATION: (Optional) International packaged entrances are usually sold erected complete by its nationwide system of service representatives.

Also available delivered complete with erection instructions.

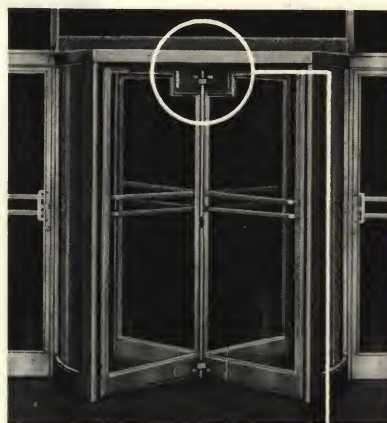
MOTOR DRIVES

International Two-Speed and Single-Speed Motor Drives meet all revolving door entrance requirements. Installation of these tamper-proof, trouble-free safety drives provides positive control of even the heaviest two-way traffic. Both have built-in speed control engineered not to exceed 12 revolutions per minute, the maximum recommended by major insurance companies.

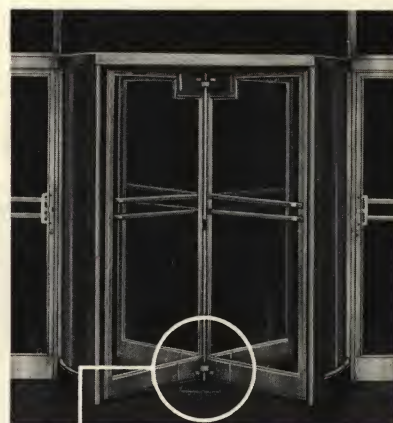
Two-Speed type is driven by two motors: one $\frac{1}{4}$ h.p., the other $\frac{1}{2}$ h.p., 110/120 volt A.C. The Single-Speed Motor is $\frac{1}{4}$ h.p., 110/120 volt A.C.

Each type of International Motor Drive can be installed either under the floor or overhead. A space 16" high, 15" wide, the full diameter of the door is required above the center over the door ceiling for the overhead-type motor drive. The underfloor drive requires a space 32" square, 1'6" deep under the floor slab at the center of the door. Access for maintenance is also required for both types. Lead lines and field wiring should be furnished by electrical contractor.

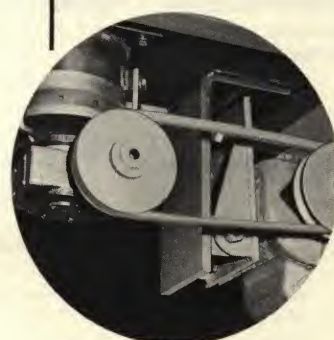
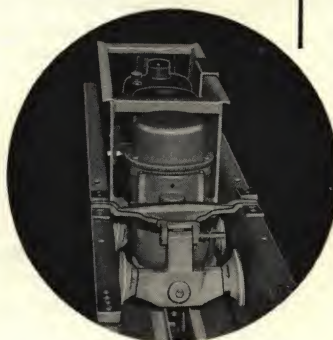
Either International Motor Drive may be added to present installations, and may be furnished with photo-electric or Welcomat control.



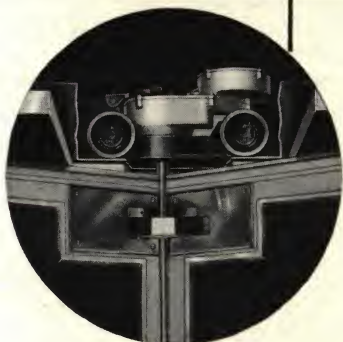
Overhead motor drive, with roll-aside feature.



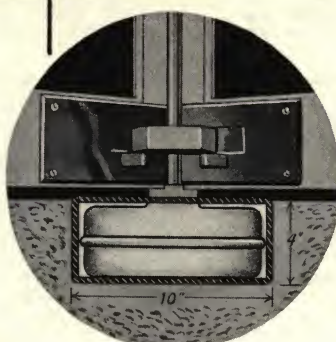
Under-floor type motor drive.



12 RPM MAXIMUM SPEED CONTROLS



Overhead Speed Control Shown with Roll-Aside Feature



Floor-Type Speed Control

International's 12 Revolutions per Minute Maximum Speed Control, developed at the suggestion of major insurance companies, requires no more space than earlier type speed controls. A separate assembly, it can be installed on existing revolving entrances with minor adaptations.

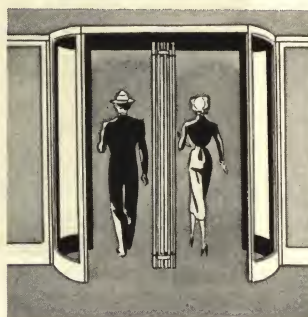
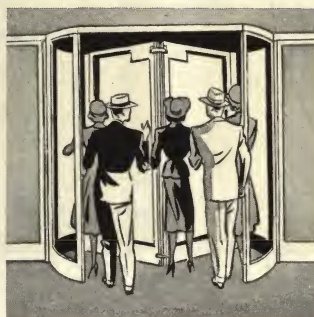
The 12 RPM Speed Control is an automatic centrifugal brake assembly attached to top or bottom of revolving door center shaft and driven by the revolving door. A system of gears increases the speed in the centrifugal brake compartment to 32.8 times as fast as the revolving door, providing momentum needed for effective, instantaneous centrifugal action. The relation of brake shoe pivots to braking surface results in a self-loading effect increasing braking action in proportion to pressure applied and, properly maintained, prevents door from turning at faster-than-normal walking speed.

Mechanism is simple, easy to adjust and regulate, built for years of carefree service. All parts readily replaceable without affecting door operation.

Required by U. S. Standard Specifications and many building codes, 12 RPM Maximum Speed Controls are included and recommended in all quotations.

Safety Features

AUTOMATIC COLLAPSIBLE ACTION OF MECHANISM



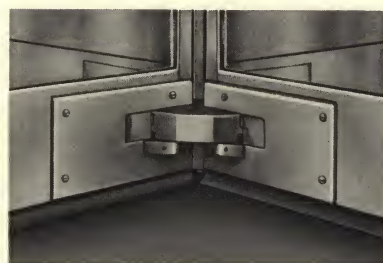
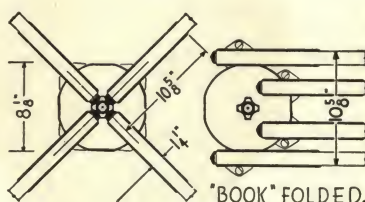
Excess pressure against any two opposing wings will cause those wings to release and become free to swing in any direction. All four wings can be collapsed and free passage offered. No knowledge of how the mechanism operates is necessary — pressure alone causes the wings to fold. Action is sure and safe at all times.

1. Panic-stricken group approaches.

2. Excess pressure releases wings.

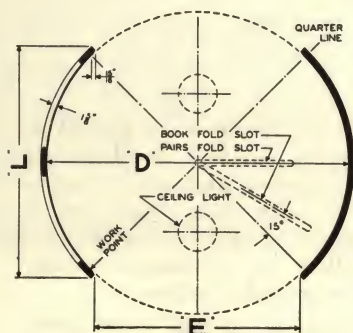
3. Wings fold outward, group emerges.

MECHANISM DIMENSIONS



BASIC ENCLOSURE DESIGNS

The enclosure designs shown here provide considerable latitude in selecting a style to blend harmoniously with the theme and plan of most buildings. However, International's design department will be glad to cooperate with you in working out special requirements.



DETAILED INFORMATION

Door heights from 6'8" to 7'6", with 6'10" standard height generally preferred. Detailed information on flexed walls, marble walls, or special materials will be furnished upon request.



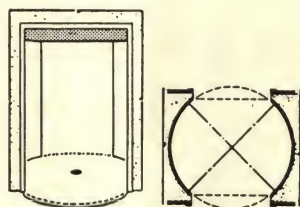
DESIGN 1

Solid walls, finished both sides, 2" or 3" cornice, mechanism cover box.



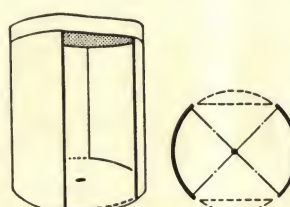
DESIGN 1G

Glazed walls, finished both sides, 2" or 3" cornice, mechanism cover box.



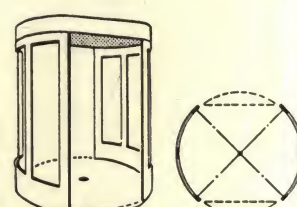
DESIGN 1U

Solid walls, unfinished convex sides, no cornice or roof.



DESIGN 3

Solid walls, finished both sides, 10" cornice, roof.

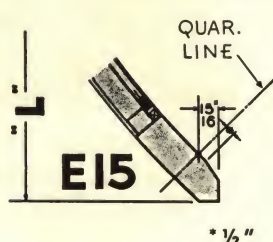


DESIGN 3G

Glazed walls, finished both sides, 10" cornice, roof.

RECOMMENDED CORNER POST

E15 standard for all models. Any other post shown on this page may be substituted on Special Custom-Built Doors, if desired, at extra cost.

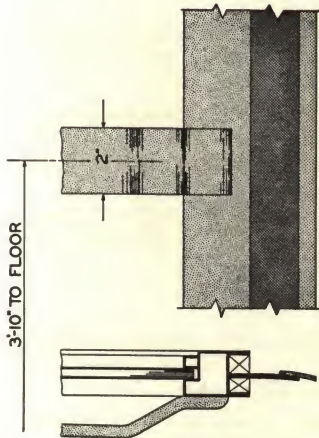


D	E	L
DIAMETER	OPENING	WALL LENGTH
5' - 6"	3' - 8 3/4"	4' - 3 1/4"
5' - 10"	3' - 11 1/2"	4' - 6 1/8"
6' - 0"	4' - 1"	4' - 7 3/8"
6' - 2"	4' - 2 1/2"	4' - 8 1/8"
6' - 4"	4' - 4"	4' - 10 1/4"
6' - 6"	4' - 5 1/4"	4' - 11 5/8"
6' - 8"	4' - 6 3/4"	5' - 1"
6' - 10"	4' - 8"	5' - 2 3/8"
7' - 0"	4' - 9 1/2"	5' - 3 7/8"
7' - 2"	4' - 11"	5' - 5 1/4"
7' - 4"	5' - 0 3/8"	5' - 6 1/8"
7' - 6"	5' - 1 3/4"	5' - 8 3/8"

†STANDARD SIZE

6' - 6" DIA. 6' - 10" HEIGHT

INTERNATIONAL REVOLVING DOORS

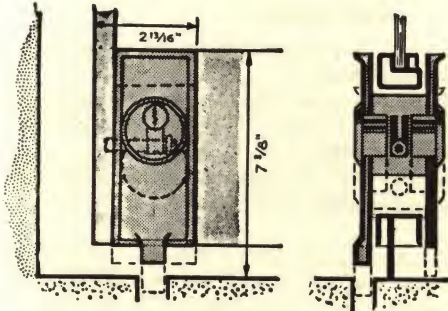
**PUSHBARS**

Single pushbars are included on all doors.

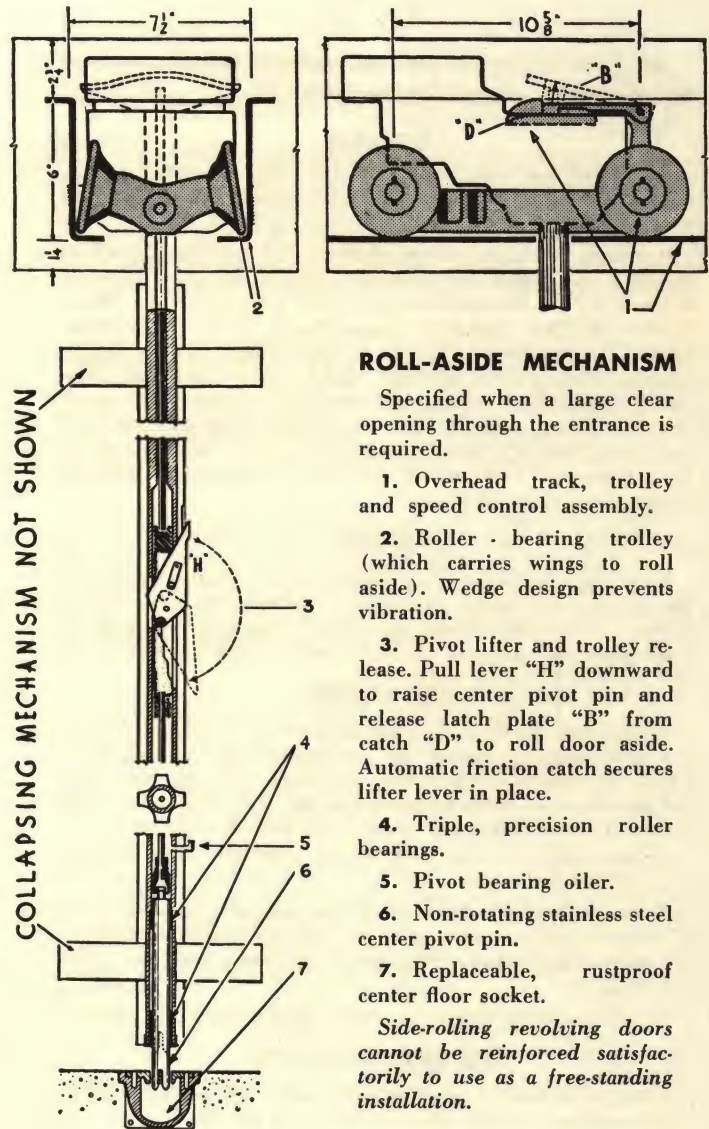
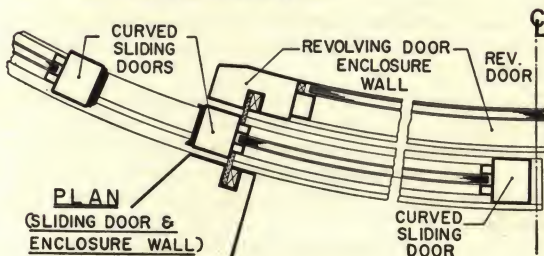
LOCKING

Two locks — for opposite or adjacent wings — are required to lock doors in any position specified. Locks may be master-keyed, at extra cost.

Locks at floor are recommended for all revolving doors. Top rail locks can be furnished at extra cost.

**SLIDING DOORS**

Primarily used in conjunction with specially built revolving door entrances, sliding doors add both design and protective features. By closing off the revolving door with sliding doors, maximum protection is assured against vandalism and the elements alike.

**ROLL-ASIDE MECHANISM**

Specified when a large clear opening through the entrance is required.

1. Overhead track, trolley and speed control assembly.
2. Roller bearing trolley (which carries wings to roll aside). Wedge design prevents vibration.
3. Pivot lifter and trolley release. Pull lever "H" downward to raise center pivot pin and release latch plate "B" from catch "D" to roll door aside. Automatic friction catch secures lifter lever in place.
4. Triple, precision roller bearings.
5. Pivot bearing oiler.
6. Non-rotating stainless steel center pivot pin.
7. Replaceable, rustproof center floor socket.

Side-rolling revolving doors cannot be reinforced satisfactorily to use as a free-standing installation.

SLIDING DOOR DETAILS

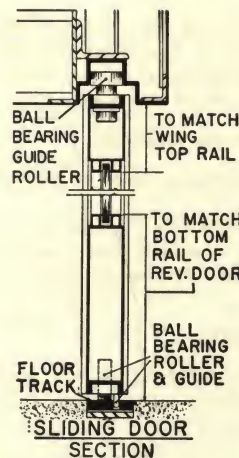
Minimum thickness $1\frac{3}{4}$ ", material should match metal and gauges specified for revolving door.

Hardware consists of: Roller bearing guides, radial floor track, bumpers, cylinder locks and flush pulls.

Sliding doors are also available in flush all-metal design and may be overhead suspended, with overhead track where floor track is not desired.

Floor supported sliding doors are recommended where headroom is limited.

Write for detailed information.



MASTER SPECIFICATIONS

INTERNATIONAL REVOLVING DOOR ENTRANCES

All items in parentheses are multiple-choice and must be selected to suit job requirements.

GENERAL

Revolving door contractor shall have had ten years' experience in the manufacture, installation and servicing of revolving door entrances.

Revolving door contractor shall furnish and install, where specified and shown on plans . . . Revolving doors as manufactured by the International Steel Co., Evansville, Ind. Model of door shall be (Standard Crystal Model No. 2880-60) (Stock Model No. 2690-60) (Special Custom-Built Crystal Model) (Special Custom-Built All-Glass Model). Wings shall be (overhead supported with roll-aside feature and overhead type speed control) (floor supported with fixed center shaft and overhead type speed control). *Note! Specify floor type speed control for floor supported doors where headroom is limited or transom comes above center of door.*

SCOPE

Revolving door contractor shall furnish circular enclosure, flat ceiling (Cornice) (Pilasters) (Sliding Doors) (Swing Doors) (Adjoining Trim), including: revolving wings, hardware, glass and complete mechanism with speed control.

MECHANISM

Wings shall be held in radial position by means of a stainless steel ball engaging in top and bottom disc of each wing. Excess pressure — greater than 60 pounds and not more than 180 pounds, at a point on the outer stile 42" from floor, shall force ball from socket and leave wings free to collapse.

Tension shall be adjustable, but its maximum shall not prevent collapse of wings.

Wings shall fold in the panic position outward, like the leaves of a book. Any one wing shall be releasable independently of the other three wings. (Manual release levers available when specified.)

No braces, arms, chains, or cables allowed between wings.

SIDE ROLLING DOORS

Wings shall fold in pairs and roll aside. Wings shall fold in panic position outward, like the leaves of a book.

Center post shall be held in position by a locking device at thrust ball bearing carried in a four-wheel, roller-bearing overhead carriage, which rolls aside in a truss-shaped supporting channel.

Center post shall be held in position by a locking device at top, and a pivot entering a socket in floor. Bottom pivot shall not rotate. Pivot lifter shall simultaneously release wings at top and bottom for free movement to side of enclosure.

FLOOR-SUPPORTED DOORS

Wings shall fold at center of door in pairs or in book-fold panic position.

Basic Standard Crystal model and Stock model door wings are supported at the floor, having overhead type speed control, but no overhead carrying device. (Roll-aside feature extra) (floor type speed control extra)

MATERIALS

STANDARD CRYSTAL MODEL No. 2880-60 — Wings and enclosures in (bronze 14 B&S gauge) (stainless steel 16 USS gauge). Hollow metal construction.

STOCK MODEL No. 2690-60 — Wings and enclosures 10 B&S gauge aluminum hollow metal construction. (Crystal design wings extra.)

SPECIAL CUSTOM-BUILT CRYSTAL — Wings and enclosures (bronze) (nickel silver) (aluminum) (stainless steel). Hollow metal construction.

SPECIAL CUSTOM-BUILT ALL GLASS — Wings and enclosures in (bronze) (nickel silver) (aluminum) (stainless steel). Hollow metal construction. All wings specially reinforced at hangers.

Minimum Gauges Recommended — Hollow metal — bronze 14 B&S gauge, nickel silver 14 B&S gauge, aluminum 12 B&S gauge, stainless steel 16 USS gauge.

FINISH

STAINLESS STEEL, BRONZE, NICKEL — All exposed surfaces shall be brought to International's No. 4 smooth, fine-lined, natural satin finish (waxed) (oiled) (lacquered).

ALUMINUM — All finished surfaces shall be given International's No. 204-A1-R1 natural satin alumilite finish.

Special brushed, polished, statuary and etched finishes extra.

GLAZING

STANDARD CRYSTAL MODEL No. 2880-60 — Wings 1/4" tempered plate; walls 1/4" polished plate.

STOCK MODEL No. 2690-60 — Wings and walls 1/4" polished plate. Crystal design wings use 1/4" tempered glass.

SPECIAL BUILT CRYSTAL — Wings 1/4" tempered plate; walls (1/4") (1/2") polished plate.

SPECIAL BUILT ALL GLASS — Wings AG1 1/2" tempered plate; AG2 and AG3 1/4" tempered plate; walls (1/4") (1/2") polished plate.

HARDWARE

Exposed hardware shall be (bronze satin) (chromium plated satin) (aluminum alumilite finish).

LOCKS: Mortise bolt type with (Standard) (Master-keyed) cylinders located at (floor) (ceiling). Electric contact strikes and surface bolts extra when specified.

CEILING LIGHTS — Two 9 3/4" diameter ceiling lights shall be furnished, glazed, including fluorescent fixture. *Wiring by electrical contractor.*

SPEED CONTROL — (Overhead) (Floor Type) — The speed of rotation of the revolving door shall be controlled by a mechanical speed control. The braking pressure of the governing mechanism must be in proportion to the pressure applied on the revolving door to prevent rapid acceleration, spinning or excessive speed at all times and must be adjustable to provide a positive maximum speed of 12 revolutions per minute.

The opening for floor speed control to be provided by floor contractor.

OPTIONAL EXTRAS

(Ceiling Slot Closer) — For Roll Aside Doors, automatic ceiling slot closer of metal to match door shall be included.

(Sliding Doors) — (Flush) or (Glazed) (Curved) or (Straight), (Floor-Supported) or (Overhead Suspended) constructed of material and design to match revolving doors, shall be furnished complete including hardware consisting of: track and hangers, guide rollers, bumpers, cylinder locks, track stop, and flush pulls.

(Swing Doors) — Constructed of material and design to match revolving door, shall be furnished complete including jamps and hardware consisting of (deadlock) (electric contact strike) (center pivoted floor type door closer) (head and floor bolts) (door stop — specify type) push and pull bars and (thresholds).

(Connections) — Consisting of . . . constructed of material and design to match revolving doors included.

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